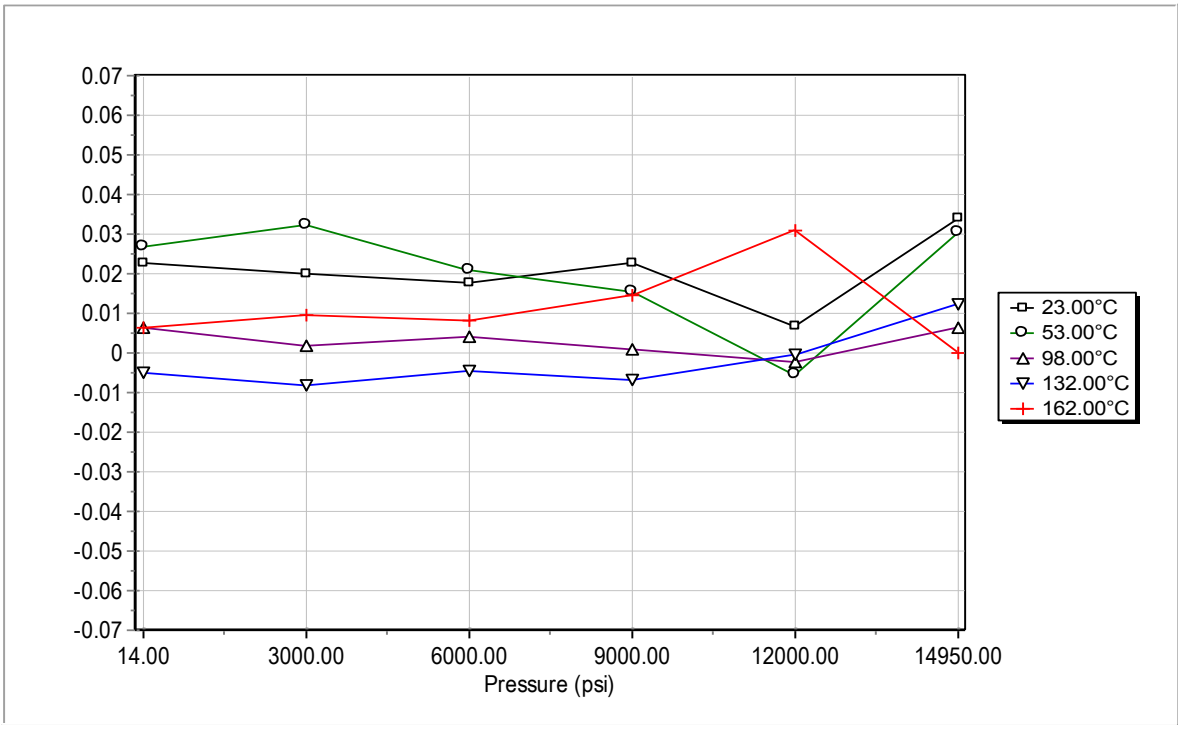
OMEGA
WELL MONITORING

Calibration Certificate NO:5260

Model: Shortline
Serial Number: 5260
Max Pressure Rating: 15000 psi
Temperature Rating: 177 ºC
Calibration Date: March 2013

Measurements and Derived Results



Specifications

Pressure Range:	Minimum:	50 psi	Maximum:	15000 psi
Temperature Range:	Minimum:	0 ºC	Maximum:	177 ºC
Pressure:	Accuracy:	± 0.05%FS		± 7.500 psi
Temperature	Accuracy:			± 1.0 ºC

Summary

Pressure Accuracy (Maximum Error):	+ 5.10psi	0.034%FS
Temperature Accuracy (Maximum Error):	+ 0.20 ºC	

Calibrations are verified to 95% of maximum full scale pressure

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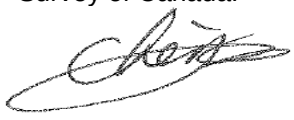
Working Standards

- DHI Oil Operated Piston Gauge – Model PG 7302-5, SN301 – M Range 100kPa to 500MPa ± 0.005% FS.
- DHI 40kg Mass Set MS-AMH-40, SN2266
- Hart Scientific Black Stack – Model 2560 - SN 91362.
- Hart Scientific Platinum Resistance Thermometer – Model 5614 – SN 496051 with an accuracy of ± 0.006 ºC (± 0.011 ºF).

Traceability Statement

All working standards are traceable to nationally or internationally recognized standards.

- DHI Model DHI PC-7302-5, SN301 traceability of mass is maintained through reference mass set R100 through determination by National Institute of Standards and Technology, NIST, United States.
- The traceability of mass is maintained to the fundamental unit of the kilogram [kg] through reference mass set R100 through determinations performed by National Institute of Standards and Technology, NIST, United States.
- The measured true mass values of the PG7302-5 components is as follows:
    - The Piston mass is equal to 200.0011g with an uncertainty of ± 3 mg and has an average density of 7230 kg/m^3.
    - The Mass Carrying Bell is equal to 800.0044 g with an uncertainty of ± 8 mg and has an average density of 6100 kg/m^3.
    - The Mass Set is made up of 10 masses of 10.1 kg or less adjusted to ± 20 ppm of their nominal true mass values and has an average density of 8000 kg/m^3. The uncertainty of the masses in mg is guaranteed to be less than 5 ppm or 1 mg, whichever is greater.
- The traceability of effective area is maintained through the 2004 DHI Piston-Cylinder calibration Chain to the National Institute of Standards and Technology, NIST, United States, and the Laboratoire national d'Essais, LNE, France.
- All DH calibrations are preformed in accordance with DHI laboratory Quality assurance manual, Rev C September 2003 and conform to ISO/IEC 17025, ANSI/NCSL Z540-1-1994, ISO/IEC Guide 25, ISO 9002, ISO-10012-1, MIL-STD 45662A.
- The Platinum Resistance Thermometer (PRT) Model 5614, SN496051 was calibrated at the ice point and/or by comparison to Standard Platinum Resistance Thermometers (SPRTs). These SPRTs are calibrated to the International Temperature Scale of 1990 (ITS-90) and their calibration is traceable to the National Institute of Standards and Technology (NIST).
- Omega Well Monitoring local gravity has been determined through the National Geodetic Survey of Canada.



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Calibration Performed and Approved By

Omega Well Monitoring recommended recalibration interval is 1 year.

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